

AMENDMENT(S) TO THE SPECIFICATION

Page 1, after the title at line 2, please insert the following heading and paragraph
-- PRIORITY CLAIM

This is a U.S. National stage of application No. PCT/DE03/00777, filed on 12 March 2003. Priority is claimed on that application and on the following application:

Country: Germany, Application 102 11 198.7, Filed March 14, 2002--

Please replace the paragraph beginning at page 2, line 7, with the following rewritten paragraph:

Description Brief description of the invention

The object is achieved by the ~~features in the characterizing part of claim 1~~ invention. A surface acoustic wave sensor is applied to an object by an adhesive. There are reflectors on the sensor body used to determine expansion and contraction. Additional reflectors on a smoothed edge zone of the body remain at the same distance apart and the temperature of the object is determined from the difference signal between these reflectors. The edge zone is without the adhesive.

Please replace the paragraph beginning at page 2, line 10, with the following rewritten paragraph:

The essence of the invention is that an edge ~~area~~ zone of the chip surface which is neither expanded nor compressed when mechanical loads are applied is used to produce a temperature difference signal. Two reflectors are incorporated in this smoothed edge zone of the SAW sensor, a short distance apart, for this purpose. Since these two reflectors are always at the same distance apart from one another irrespective of the mechanical load on the sensor, the temperature of the chip can be deduced directly from the difference signal between these two reflectors. This simple measure means that all that is necessary is to evaluate the time interval between these two signals. This time interval is then directly proportional to the current temperature of the SAW sensor.

Please replace the paragraph beginning at page 3, line 1, with the following rewritten paragraphs:

Comprehensive Brief description of the drawings

Figure 1 shows a plan view of a surface acoustic wave sensor [[1]].

Figure 2 is a graph showing displacement of points on the sensor during its use.

Description of a preferred embodiment

This A surface acoustic wave sensor 1 is applied to the surface of ~~the~~ a part to be measured (not shown), via a layer of adhesive. The adhesive 2 elastically transmits the length changes of the part to be measured to the surface acoustic wave (SAW) sensor. ~~The~~ An antenna 3 via which the electromagnetic pulses are passed to the SAW sensor and are sent back again is illustrated schematically on the sensor. These electromagnetic waves are converted by ~~the~~ a transducer 4 to mechanical waves, which run over the SAW sensor.

Depending on the object to be measured, reflectors 5a, 5b are fitted on the surface acoustic wave sensor. The area which is mechanically expanded and compressed during performance of measurement tasks on this sensor is ~~provided with the~~ identified by reference symbol 7. ~~The two~~ Two opposite outward edge areas 8 of the surface acoustic wave sensor are areas which are not expanded or compressed, owing to the mechanical characteristics of the adhesive and of the substrate material.

Please replace the paragraph beginning at page 3, line 20, with the following rewritten paragraph:

Reflectors Additional reflectors 6a and 6b are arranged in ~~this~~ one edge area 8. The distance between the reflectors 6a and 6b is very largely independent of the external load, and is thus always virtually constant. Practical trials have shown that the length of this smoothed edge area 8 corresponds approximately to three times the thickness 9 of the substrate material of the SAW sensor excluding the layer of adhesive. One possible way to enlarge the smoothed edge area 8 is to deliberately omit the adhesive 2, ~~by means of which~~ applies the surface acoustic wave

sensor is applied to the substrate material, ~~in~~ from the edge area 8. No forces are transmitted in the area without adhesive 10.

Please replace the paragraph beginning at page 4, line 5, with the following rewritten paragraph:

Figure 2 illustrates the measurement result for a surface acoustic wave sensor which has been bonded onto a substrate material which has been extended for trial purposes. The measurement points along the surface acoustic wave sensor are plotted on the abscissa of this graph. The expansion of the surface acoustic wave sensor is illustrated on the ordinate of this graph. The two opposite smoothed edge zones 8 in which the sensor does not extend when loaded are represented by horizontal lines. The area 7, which responds in proportion to the expansion of the material to be measured is located between these lines. ~~These additional~~ Additional reflectors are arranged in the area of the smoothed edge zones 8.

Please delete the entire section entitled "List of reference symbols" on page 5.